

## Neglected type specimens of Western Meadowlark *Sturnella neglecta* from Audubon's last expedition

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**SUMMARY.**—The 'original specimen' of Western Meadowlark *Sturnella neglecta*, collected by John James Audubon in 1843 on his only western expedition, was deposited at the Academy of Natural Sciences of Philadelphia by his companion Edward Harris in 1849. But the specimen was mysteriously lost during the following decades, prompting Stone in 1899 to designate a lectotype from one of two other surviving skins from the original series. After 150 years, I rediscovered the lost type, which bears an unsigned original tag in Audubon's own hand, and a second tag in an unknown hand incorrectly attributing the skin to a collection donated to the museum in 1857, by W. A. Hammond and J. G. Bell. Notwithstanding, Stone's lectotype is considered 'original' material despite that it was collected 500 km from the locality of the original specimens, and therefore retains its name-bearing status. The rediscovered type and two other specimens from the 1843 expedition, including one that was discovered in a New Jersey barn in the 1930s, are herein designated as paralectotypes.

In the spring of 1843, John James Audubon (1785–1851) journeyed north-west to the confluence of the Missouri and Yellowstone rivers, along the modern border of North Dakota and Montana, in the company of Edward Harris (1799–1863), Isaac Sprague (1811–95) and John Graham Bell (1812–99). While traveling through what is now south-eastern South Dakota, Audubon wrote in his journal, 'May 22 ... we saw Meadow Larks whose songs and single notes are quite different from those of the Eastern states; we have not yet been able to kill one to decide if new or not.' In his own journal, Harris concurred, 'We have seen a Meadowlark to-day which must prove a new one, its note so entirely different from ours.' The next day, Audubon wrote, 'Bell and Sprague saw several Meadow-larks, which I trust will prove new, as these birds have quite different notes and songs from those of our eastern birds.'

In fact, Audubon and his companions were not the first to notice the peculiar meadowlarks. A passage in the field journal of Meriwether Lewis (1774–1809) reveals that one was collected nearly 40 years earlier, in Great Falls, Montana. On 22 June 1805, Lewis wrote: 'there is a kind of larke here that ... differs from ours in the form of the tail which is pointed, being formed of feathers of unequal length; the beak is somewhat longer and more curved and the note differs considerably; however in size, action, and colours there is no perceptible difference; or at least none that strikes my eye.' But Lewis did not publish a description of the bird, nor did he return to Philadelphia with a specimen. That task was accomplished by Audubon (1844).

The first specimens were collected on 24 May 1843, but Audubon and his companions were discouraged to find that the strange meadowlarks were difficult to distinguish visually from Eastern Meadowlark *S. magna*. There is one extant *S. magna* skin from their passage through Illinois in April 1843 in the Academy of Natural Sciences of Philadelphia collection (ANSP 162536), indicating that this conclusion was reached after comparing the new material to *S. magna* skins in the field. Audubon lamented, 'May 24 ... we shot four Meadow-

larks that have, as I said, other songs and notes than ours, but could not establish them as new.' But Harris remained adamant: 'May 24. We killed ... several of the new Meadow Larks, for new I will insist it is notwithstanding that we cannot from the books establish any specific difference, yet it is totally different. But as we cannot set down these notes on paper, and the world will not take our words for it if we do, we must be content to refrain from publishing this good species unless we can on our return find a something [sic] about the bird more than we can now discover to establish a specific difference: Mais nous verrons.'

Despite his initial reservations, Audubon (1844) included the new meadowlark, which he named *S. neglecta*, in the 'Octavo Edition' (1839–44) of *The birds of America* (VII, 339, pl. 489). The species is still considered valid and Audubon's name has priority (Davis & Lanyon 2008). Cassin (1850) confirmed that Harris deposited an 'original specimen' of *S. neglecta* at ANSP in 1849, but strangely made no mention of it when he reviewed the taxonomy of the Icteridae several years later (Cassin 1866). By that time, Cassin's physical and mental health was rapidly deteriorating due to long-term exposure to arsenic, which was used in specimen preparation during his time, an affliction that resulted in his death in 1869. During these final years, Cassin was systematically cataloging the ANSP collection, each day increasing his exposure and exacerbating his condition. The type of *S. neglecta* was evidently stored together with a conspecific series donated by W. A. Hammond and John Bell in 1857, when someone, perhaps Cassin himself, attached a second label (undated) that misattributed Audubon's type to 'Kansas. W. A. Hammond', after which it was mistaken by Stone (1899), Street (1948), and others, for one of Hammond's skins. Audubon's diminutive original tag bore a date, but not his name, and was easily overlooked as one of Hammond's skins, especially when juxtaposed with the confident words on the erroneous second tag.

After Cassin's death, the bird collection had no curator for more than 20 years. Witmer Stone (1866–1939), who helped to restore the collection in the 1890s, had no reason to doubt the veracity of the second label, and apparently did not recognise Audubon's handwriting on the original tag. On the back of the second label is written, in what appears to be Stone's penmanship, 'May 29, 1863 or 1843? Nipouri River' [sic]—a humorous misreading of Audubon's archaic double-s in 'Missouri'. Having failed to identify the error, Stone (1899) concluded that the *S. neglecta* type 'cannot now be found' and designated a lectotype: a skin from the same expedition that Audubon had given to Spencer Baird (1823–1927), who deposited it at the United States National Museum, Washington DC (USNM 1939; Baird 1860: 539). That skin had been collected on 30 June 1843, at the Fort Union trading post on the modern border of North Dakota and Montana, the westernmost point reached by the expedition party, almost 500 km from the locality of the type deposited at ANSP by Harris.

In July 2016, I discovered the error and identified specimen ANSP 3543 as the lost *S. neglecta* type deposited by Harris in 1849. The skin was collected in South Dakota, just five days after the party first noticed the strange meadowlark, as per Audubon's and Harris' journals (Audubon 1897). Audubon's handwriting on the original label includes the name '*Sturnella neglecta*', which he would not have written in the field, so this appears to be a tag that was attached after the expedition, in anticipation of the specimen being deposited at ANSP. Unfortunately, the measurements provided in Audubon's (1844) description are of almost no use for comparison today. First, he was not clear as to whether his measurements came from a freshly killed (unskinned) specimen, from a fresh skin or a dried skin. Indeed, his measurement of 'alar extent' (i.e., wingspan) can only have been taken from a freshly killed bird, before it was prepared. This uncertainty, compounded by the deteriorated state of the 173-year-old specimen, and probable differences in measuring technique and instrument accuracy, preclude any meaningful morphometric comparison between the rediscovered type and Audubon's description. The tail of the type specimen is now worn

and frayed, and the tip of its bill missing. The only measurement that is perhaps useful to compare is the length of the 'wing from flexure' (i.e. distance from the radiale to the wingtip), which is relatively unambiguous to measure and unlikely to change with time except as a result of wear. The wingtips of the type specimen are in relatively good condition and this measurement matches Audubon's (1844) description, both being 124 mm.

However, Audubon's (1844) illustration of *S. neglecta* was certainly not 'drawn from nature by J. J. Audubon', as stated below the image. Unlike the illustrations in *The birds of America* (1827–38), which had been drawn life size and engraved in copper, 'The Octavo Edition' (1839–44) featured hand-coloured lithographs of reduced copies of the originals, many of which were completed by the ornithologist's son, John Woodhouse Audubon (1812–62). The illustration that accompanied the description of *S. neglecta* (Audubon 1844, pl. 489) appears to be a crude rendering of the juvenile *S. magna* depicted in the Havell edition of *The birds of America* (pl. 136), but with some structural details and the plumage coloration altered to better resemble *S. neglecta*. The reduction drawing, a scan of which was published by Boehme (2000), was drawn onto a lithographic stone and the final print hand-coloured by J. T. Bowen in Philadelphia, presumably with the type(s) available for colour reference. Thus, the illustration that accompanied the description of *S. neglecta* was in fact an amalgamation of two different species!

In the late 1930s, an incredible collection of skins that had belonged to Harris was discovered in a wooden chest in a barn in New Jersey, and subsequently donated to ANSP (Street 1948). Apparently, Harris had retained some skins for personal use, and did not donate his 'entire collection' in 1849 as reported by Cassin (1850). Many specimens were in poor condition, but among those that were salvaged was a single *S. neglecta* skin with a label written by Audubon, 'Missouri River 1843' (ANSP 162537)—the same locality given on the tag of the rediscovered type that Harris deposited in 1849 and was subsequently lost. Having now examined a large number of skins from the 1843 expedition, it appears to me that Audubon was in the habit of writing 'Missouri River' in May and early June, when the party was in transit through South Dakota, whereas specimens collected between 10 June and 16 August, when the expedition party was at Fort Union, North Dakota, were accordingly labelled 'Fort Union' by Audubon. On the day the rediscovered type was collected—29 May 1843—Audubon and his companions were camped near Fort George, a historic trading post located c.32 km south of Fort Pierre, South Dakota.

Audubon (1844) gave measurements for one male specimen from 'Upper Missouri', and Harris deposited a type at ANSP (Cassin 1850, Stone 1899), but Audubon's description was not explicit in stating that the name *neglecta* was fixed to a single specimen. For this reason, Stone's (1899) lectotype (USNM 1939), which was designated by inference because the original type was lost, retains its name-bearing status (ICZN 1999, Art. 74.5). The rediscovered type (ANSP 3543) is hereby designated as a paralectotype, as is the undated and unsexed skin from the Street (1948) acquisition, labelled 'Missouri River 1843' (ANSP 162537) and a male collected 29 June at Fort Union, presented to George N. Lawrence by Victor G. Audubon and now in the collection of the American Museum of Natural History, New York (AMNH 42244). Thus, the long-standing mystery of the missing *S. neglecta* type is now solved.

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